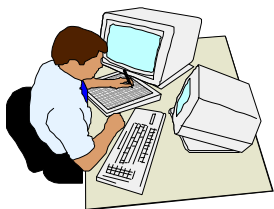


Information Systems Center/580

AETD Institutional Status Review



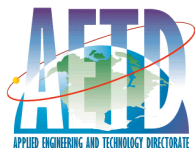
Presented by:

Jim Byrnes
Associate Branch Head/587
Advanced Data Management & Analysis Branch
Information Systems Center

- **PROJECT STATUS**
- **TECHNOLOGY STATUS**
- **INSTITUTIONAL STATUS**
 - Awards, Papers, Conferences
 - Collaborations
 - Outreach
 - Safety
 - QMS
 - Personnel
 - Manpower
 - Travel
 - Training
- **SPECIAL PRESENTATION**
 - Belt Version of the Eta Model

PROJECT STATUS

End Item Product/Service	Customer	Lead Code(s)	Major Accomplishments/Highlights/Comments	Tech Issues	Schedule Issues	Cost Issues	Staffing Issues
<i>Flight Projects</i>							
CGRO		582	1) Completed testing of the procedures to handle the rollover of the onboard software clock (TF28) so that ephemeris and other time-driven functions continue to perform correctly onboard				
EO-1		582, 583	1) Prepared, loaded, and checked out final ACE and XBand RSN loads at the EO-1 spacecraft to close out all remaining Problem Reports (PRs) associated with these subsystem components. 2) Conducted an extensive code walk-thru of the Housekeeping RSN software to locate and resolve all issues associated with the processing and distribution of GPS time and position data. 3) Established an EO-1 FSW maintenance plan for the EO-1 Mission, with plan elements to be presented at the EO-1 Operations Readiness Review. 4) Preparing final software loads for the PSE, Housekeeping, and main spacecraft processors in preparation for a late November "freeze" on all mission flight software. 5) Redesigned GPS Time Correlation FSW	Y	Y		
EOS PM (Aqua)	PM-1 (422)	582	1) Aqua Spacecraft I&T: Build 1.2f of the Aqua FSW has been running flawlessly since.				
ESDIS	ESDIS (423)	581, 583, 586	1) Participated in all launch readiness activities <ul style="list-style-type: none"> • A command and telemetry test with Terra • A MOSS-3 (Mission Ops Sys Sims) science processing test • Held Terra science Operations Readiness Review • Participated in the PM MOR dry run 2) Supported the Independent Annual Review of the EOS-G Program 3) Baselined the MOPITT SIPS ICD 4) Participated in the CEOS Working Group on Information Systems and Services meeting in Nairobi, Kenya 5) ESDIS SOW Modifications resulted in 12 open positions on ESDIS; Some Senior				Y



PROJECT STATUS



End Item Product/Service	Customer	Lead Code(s)	Major Accomplishments/Highlights/Comments	Tech Issues	Schedule Issues	Cost Issues	Staffing Issues
Hubble Space Telescope (HST)	HST (441)	581, 582, 584	<ol style="list-style-type: none">1) In response to drift from Sun-center during shadow, threshold changes to FSW have been uplinked to assure battery state of charge.2) For serving mission 3A simulations:<ul style="list-style-type: none">• All FSW loads delivered.• Delivered a DF/386 patch to configure the FSW to a four-battery configuration, in case the PCU bus C fault worsens.• Preparations for 486 installation during SM3A complete.• Confidence testing of 486 FSW continuing successfully3) Delivered NSSC-1 FSW Baseline 7.2 (9/15) to support test and integration of the Aft Shroud Cooling System/NICMOS Cryo Cooler with the HST Science Instrument Command and Data Handling subsystem. (Includes 70 change requests)4) Submitted Wide Field Camera 3 Control Section FSW Requirements Document.5) Delivered NICMOS Control Section FSW Version 4.0C to handle Single Bit Upset problems (to be installed after HST Servicing Mission 3A).				
ICESat/GLAS		582	<ol style="list-style-type: none">1) Instrument FSW Build 1 delivered. Includes all functionality except DSP hardware-dependent flight code.2) Established on-orbit FSW maintenance team for GLAS FSW testing				
IMAGE	MIDEX (410)	581	<ol style="list-style-type: none">1) Conducted Mission Readiness Review				
Landsat-7	Landsat (430)	586, 587	<ol style="list-style-type: none">1) Completed transition of responsibilities to the USGS, 9/30/99				

PROJECT STATUS (Cont'd)

End Item Product/Service	Customer	Lead Code(s)	Major Accomplishments/Highlights/Comments	Tech Issues	Schedule Issues	Cost Issues	Staffing Issues
MAP	MIDEX (410)	582	<ol style="list-style-type: none"> Completed Flight Software Acceptance Testing of MAC primary flight processor and all 5 remote terminals. Concluded the investigation into the LMAC Mongoose hardware reset anomaly. Conducted Project-level Peer Review--FSW requirements, software design, algorithms, and testing impacts due to new mission contingency option to use a Ball Star Tracker rather than the tracker currently supported by FSW. Delivered first HDS build for the backup Ball Star Tracker. A second build will support the full ST model. 				
NGST	STScI	581, 582	<ol style="list-style-type: none"> Supported Post Award Briefings with Phase 1 primes Prepared detailed work plan for Cycle 1 (from now to 4/00) and presented it to the Project. Prepared FY 00 detailed budget Resolved issues related to the Observation Plan Execution (event driven science scheduling) and presented the concept to the Primes. Began the FSW requirements allocation between ISIM and SSM. Participated in a detector readout engineering analysis group, which was formed to define/refine requirements on data throughput. Developed an architecture review model, which can be used to evaluate the NGST proposed hardware C&DH architectures. 			Y	Y
RXTE		582	<ol style="list-style-type: none"> Delivered FSW contingency patch--to maintain solar array control using potentiometer data to estimate position--to be used if the second GSACE fails. 				
SWAS		582	<ol style="list-style-type: none"> Completed a redesign to the TSM handling of flip mirror position 				
TRACE		582	<ol style="list-style-type: none"> Analyzed and supported recovery from a CPU Cold Start due to an SAA SEU. 				

PROJECT STATUS (Cont'd)

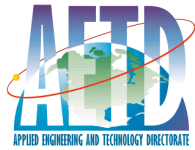
End Item Product/Service	Customer	Lead Code(s)	Major Accomplishments/Highlights/Comments	Tech Issues	Schedule Issues	Cost Issues	Staffing Issues
Triana	SMEX (410)	581,582, 584, 586	<ol style="list-style-type: none"> 1) Supported planning activities for project suspension during National Academy of Sciences (NAS) review 2) Installation of I&T system in building 29 has begun. 3) Responded to Triana stand-down by moving 2.5 Civil Servants to the ACS FSW development activity. 		Y	Y	Y
TRMM		582	<ol style="list-style-type: none"> 1) Delivered and uplinked a FSW patch to use the target vs. actual attitude for solar array tracking in order to prevent an array harmonic frequency problem at high beta angles. 2) Developed and presented the requirements, design, code and test plan for a FSW patch that shall prevent the reoccurrence of a PSIB timer comparison logic problem. 3) Completed the design of TSM changes to replace CERES instrument +15V voltage monitors with current monitors. 4) Built and uplinked ACS Table #86 to disable ephemeris continuity checks for all TDRS's, after a new TDRS replaced the spare. 				
WIRE		582	<ol style="list-style-type: none"> 1) Completed the move and recertification of the WIRE FSW lab from building 5 to building 1. 2) Delivered and supported uplink of FSW changes that remove all launch-specific Action Points and stored commands. 3) Analyzed, resolved, and supported recovery from a 1 second corruption of onboard time 4) Supported recovery from safehold, which occurred when a FSW Failure, Detection, and Handling voltage threshold for CSS sun-presence was exceeded during eclipse. 5) Aborted plans to develop and uplink a new Safehold control mode desired as proof-of-concept for the VCL mission. Activity aborted due to lack of funds. 			Y	

PROJECT STATUS (Cont'd)

End Item Product/Service	Customer	Lead Code(s)	Major Accomplishments/Highlights/Comments	Tech Issues	Schedule Issues	Cost Issues	Staffing Issues
Science Support							
Earth Sciences Directorate	Code 900	584, 587	1) 930/ Supported Science Visualization Lab <ul style="list-style-type: none"> Created animations for hurricanes Bret, Cindy, Dennis, Floyd, Hillary and Irene Designed Antarctica website Designed a website for the Carolina Flood images 2) 930/ Completed a 'Belt Version' of the Eta (Numerical Weather Predicting) model. Extending its domain to ± 180 degrees in longitude.				
Space Sciences Directorate	Code 600	583, 586, 587	1) 630/ Developed CDF ftp statistics software for NSSDC 2) 660/ Released new web servers for the general lab (lheawww) 3) 660/ Released new Cosmic and Gamma Ray server for data and tools (cossc) 4) 692/ Generated initial web-site to submit IMAGE/LENA parameters and view resulting data plots 5) 696/ Community Coordinated Modeling Center(CCMC) for Space Weather <ul style="list-style-type: none"> Initiated requirements analysis Selected Gambosi's Magneto/Hydrodynamics model for the center prototype 				
Infrastructure Support							
IFMP	IFMP (401)	585, 584	1) Replanning Activity: Major effort has been undertaken by the project to determine the future of the contract. 2) Panel member on the NASA-Wide system architecture review at MSFC	Y			

PROJECT STATUS (Cont'd)

End Item Product/Service	Customer	Lead Code(s)	Major Accomplishments/Highlights/Comments	Tech Issues	Schedule Issues	Cost Issues	Staffing Issues
Networks and Infrastructure		584, 585	<ol style="list-style-type: none"> 1) Resolved WSC LOR tape retention problem so automated POCC's can recover data after a long weekend 2) Fostered an agreement between Japan's NASDA and MITI agencies and NASA-ESDIS to bandwidth share a trans-pacific telecommunication service. Final agreement/signatures forthcoming. 3) Established international network connectivity to support technology demonstration to the Committee on Earth Satellites (CEOS) in Stockholm, Sweden 4) Established Windows NT 4.0 Trusted Host Configuration Guidelines portion of the Trusted Host Model Security Guidelines as part of the NASA-wide Trust Model Working Group 				
SEL	SEL (581)	581	1) Completed preparations for 24 th Annual Software Engineering Workshop December 1-2, 1999				
ISC Technologies & Initiatives							
FSW Reuse Library		582	<ol style="list-style-type: none"> 1) Introduced FSW Reuse Library initiative to 582 technical staff. 2) Collection of branch FSW assets is underway. 3) Branch FSW development standards are under review. 				
Instrument Remote Control (IRC)		588	1) Hosted the Two day SOFIA Data Cycle System Working group				
NGST Scientist's Expert Assistant (SEA)		588, 583	1) Delivered release 4.0 to the NGST Project				
Operating Missions as Nodes on the Internet (OMNI)		588	1) Demonstrated to the CSOC Chief Architect				
Pico-POCC		584	<ol style="list-style-type: none"> 1) Goal is POCC functionality on a hand-held computer. 2) Submitted and proposal DDF proposal for funding. 3) Researching hand-held computers and head mounted visualization devices. 				



PROJECT STATUS (Cont'd)



End Item Product/Service	Customer	Lead Code(s)	Major Accomplishments/Highlights/Comments	Tech Issues	Schedule Issues	Cost Issues	Staffing Issues
Scientist's Mission Assistant and Research Tool (SMART)		588	1) Presented the Architecture Review				
SERS	588	586	1) Held the first Spacecraft Emergency Response System (SERS) User's Group Meeting (10/5/99) in order to demonstrate new technologies to be incorporated and discuss future enhancements				
Visualization And Graphical Environment (VisAGE)		588	1) Demonstrated VisAGE 3.0 to the SMEX and Triana flight operators 2) VisAGE has been integrated with the ITOS system and will be installed in the Triana operations area				

- Presented Preliminary Version GSFC Information Sciences and Technology (GIST) Strategic Plan to A. Diaz
- Demonstrated Operating Missions as a Node on the Internet (OMNI) and the Spacecraft Emergency Response System (SERS) for SOMO Technology Program at the NASA JSC Inspection Day (*JSC equivalent of GSFC Technology Showcase*)
- Presented Paper on "Information Technology Strategic Planning as a Tool for Enabling 21st Century Missions" on ISC'S Results and Lessons Learned in Technology Planning at AIAA Space Technology Conference in Albuquerque, NM
- Space Objects Technology Group (SOTG) held the final Technical Review Meeting before Turnover to the Object Management Group (OMG) at the end of the Calendar Year
- Hosted the Carnegie Mellon University, Software Engineering Institute Review of the Space Objects Technology Group Architecture
- Internal Research and Development (IRAD) – Submitted Proposals to GSFC IR&D in the Following Categories:
 - Constellation Management Tools & Visualization
 - Collaborative Engineering Environment
 - Scientific Data Analysis Tools
 - IP In-space Demonstration

AWARDS, PAPERS, CONFERENCES

- **Attended the Astronomical Data Analysis Software and Systems (ADASS) Conference:**
 - **Lisa Koons/Appnet/588 Presented a Paper titled "Using XML and JAVA for Astronomical Instrument Control"**
 - **Sandy Grosvenor/BAH/588 Presented Posters and Demonstrations for the Scientist Expert Assistant (SEA) Project**
 - **Lisa Koons/Appnet/588 Presented Posters and Demonstrations for the Instrument Remote Control (IRC) Project**
 - **Ken Sall/Appnet/588 Presented Posters and Demonstrations for the Common Planning and Scheduling System (Compass) Project**

- **Attended the International Astronomical Federation (IAF) Conference:**
 - **Mark Lupisella/584 Presented a Paper entitled "Ensuring the Integrity of Possible Martian Life"**
 - **Susan Semancik/584 Presented a Paper entitled "SAFS: The Standard Autonomous File Server"**

- **James Geiger/587 Presented a Paper titled "A Belt Version of the Eta Model: Preliminary Results" at the 13th Conference on Numerical Weather Prediction**

AWARDS, PAPERS, CONFERENCES (Cont'd)

- Paula Reitan/587 Presented a Paper entitled " Weighted Minmax Algorithm for Color Image Quantization" at the IASTED International Conference on Computer Graphics and Imaging
- Ken Sall/ Appnet/588 Presented the Instrument Remote Control (IRC) Project at XML World
- Donna Smith/584 Presented "Overview of the Wallops Flight Facility Mobile Range Control System" at the 35th International Telemetering Conference
- Leslye Boyce/582 Presented ISC Technology Plans at the ATI Software Solutions for Space Conference in Bethesda, MD
- Ken Lehtonen/584 Submitted a Paper Entitled "Culture Management on the NASA Hubble Space Telescope Control Center Reengineering Project" to the Project Management Institute Conference
- Tim Ray/584 Represented Goddard at the CCSDS Fall Workshop in the Netherlands and Participated in Discussions on Proposed CFDF Protocol for File Transfer
- Jeannine Shirley/586 was Selected by the Museum of Science and Industry as one of their African American Women in Science and Technology for the Black Creativity 2000 Exhibition
- Jackie Mims/586 received the 1999 Woman of Color Technological Excellence in Government Leadership Award

COLLABORATIONS

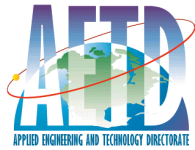
- Presented to APL Spacecraft Managers, FSW Branch's Approach to Using a Dedicated Contractor Team for On-Orbit FSW Maintenance
- Jay Pittman/584 at Wallops Collaborated with Greenbelt Learning Center for Classes on Video to be Completed as a Group across the Network – "Real Time Systems Design" was attended by 8, "Linux Development" by 5
- Participated in Identification Subgroup at Archival Workshop at NARA to Discuss Means to Identify Data, Schemes that are used, and Required Common Services
- Met with U.S. Air Force Research Lab (AFRL) and Lockheed Martin to Discuss Possible Collaboration between the Operating Missions As Nodes on the Internet (OMNI) Project, AFRL's Improved Space Architectures Concept (ISAC), and Remote Exploration and Experimentation (RE&E) Efforts development of partnership agreement between GSFC and the USNA for the next generation of the SAIL facility

COLLABORATIONS (Cont'd)

- **Discussed Possible Partnership to Develop a Data Warehousing and Knowledge Management Prototype for the Cross Enterprise Technology Development Program and the Intelligent Synthesis Environments (ISE) Research Effort with SAS Institute, Inc.**
- **Met With DERA, UK, to Obtain Approval to use the STRV Spacecraft for Flight Testing of Various Space Link Protocols – WIRE can't be used due to lack of Computer Memory**
- **Agreed to Serve on Working Group for Stsci's Astronomer's Proposal Tools (APT) Effort to Create a Plan for Developing an Operational Effort Based on the Scientist Expert Assistant (SEA) Prototype**
- **Participated in CCSDS 3, 1A, and 1F International Meetings in Europe to Discuss Space Link Extension (SLE) Services, SLE Service Management, Packet Telemetry and Telecommand Protocols, Proximity Link Protocol, and CCSDS File Delivery Protocol**

OUTREACH

- **Dennis Small/584 and Cindi Adams/584 began the AETD Minority Career Mentoring Program – New Website has Complete Schedule:**
<http://ohr.gsfc.nasa.gov/DevGuide/DevPrograms/Mentor/Trainingaetd.htm>
- **Completed and Released the NASA Portion of the**
<http://www.afterschool.gov> Website – this is the NASA Portion of a
Government-Wide Educational Outreach Website which will serve as a
Portal into NASA's many Education Sites
- **Participated in Educational Outreach with Triadelphia Elementary School in**
Howard County, MD
- **Supported Space Night at Westowne Elementary School, Catonsville, MD**
- **Answered E-mail Questions about HST, NASA, and Space for 3rd Graders in**
Washington State
- **Space Presentation to 6th Graders in Parker, Colorado**



INSTITUTIONAL STATUS

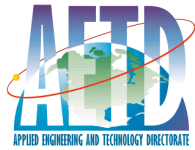


SAFETY

- Downloaded the Safety Videos to the Internet for Presentation to Goddard and Wallops ISC Employees

QMS

- Closed all Outstanding NCR's
- Completed 15 of 20 ISC Internal Audits
 - Branches Scheduling Remaining Audits



INSTITUTIONAL STATUS



PERSONNEL

Full Time Civil Servants:	298
Part Time Civil Servants:	15
Total Losses:	1
Total Gains:	2

Total Onboard as of 11/23/99 313

HIRING SUMMARY

➤ Experienced Hires (7):

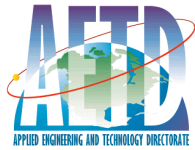
- 3 Fills
- 2 Offers Extended
- 1 Offer Being Negotiated
- 1 Ad Reposted and Closed

➤ Fresh-Out Hires (6):

- 6 Open Recruiting Slots

➤ Co-Ops (6):

- 6 Open Slots



INSTITUTIONAL STATUS



PERSONNEL

➤ Successful Position Fills:

- Mission Director (GS13/14) ← Selection Made; Onboard TBD; Offer Extended
- ISE (Freshout) (GS 12/13) ← D. Harrison Selected; Onboard TBD; Offer Accepted
- Advanced Architectures (Freshout) (GS12/13) ← Selection Made; Onboard TBD; Offer Extended
- 581 Associate Branch Head (GS14) ← L. Gatto Selected; In OHR

➤ Critical Position Status:

- ESDIS Interface Engineer (GS12/13) ← Offer Declined; Ad Reposted; Closed 11/12